

## **Small-Scale Forest Ownership across Europe: Characteristics and Future Potential**

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The concept of small-scale forest ownership means different things to different people in different countries. Traditionally, within Europe, many small-scale forest owners were economically dependent on their forests, either for home or commercial use, usually linked with farming activities. However, many small-scale forest owners are no longer economically dependent on their forests and these owners appear to increasingly focus their management on amenity functions rather than on production functions. These changes in forest ownership are related to more general trends in rural dynamics. As a result of these dynamics, increasingly rural development is not focused on agricultural modernisation, but on rural restructuring. A description of how forest owners themselves perceive their forests has been made on the basis of a survey amongst 1401 small-scale forest owners in eight European countries. Data were collected on ownership and management characteristics as well as on the perspectives regarding the future of the rural area in which the forests are located. The median forest size varies between 1.3 ha in Greece to 4.5 ha in Spain. About 30% of the forest owners have an indifferent attitude to their forests. This group includes many absentee owners and retired local owners, who own only forest lands but who are not economically dependent on these forests. Almost 40% of the forest owners are only modestly interested in forest management; often they have an environmental management orientation. This group includes many hobby owners and part-time employed people. Only one-third of the private forest owners are still economically dependent on their forests; they have predominantly a multifunctional management orientation. The survey findings suggest that policies to stimulate forestry development should be diversified in respect to these different types of small-scale forest owners.

**Keywords:** management orientation, rural development, regional differentiation

## INTRODUCTION

As witnessed by this journal, during the last decade there has been an upsurge in interest in small-scale forestry. Although the concept of small-scale forestry is now well-recognised in forest research and policy, this does not mean that there is an unequivocal interpretation of the concept. Harrison *et al.* (2002) demonstrated on the basis of a comparison of experiences with small-scale forestry in the USA, Europe, Asia and Australia that the concept means different things to different countries and different people. Also, within regions important differences exist in the meaning attributed to small-scale forestry. These different meanings may be demonstrated by the small-scale forestry situation within Europe. About one half of the European forests are privately owned, and most holdings are of small-scale. It is estimated that there are approximately 15 M small-scale forestry holdings in Europe, covering more than 30 M ha of land in Western Europe, and 7 M ha in Central and Eastern Europe (COST Action E30 2001). The average size of privately owned forests and woodlands ranges from 2 to 4 ha in Belgium, France, Spain and Switzerland to 28 to 53 ha in Finland, Norway and Sweden (UN-ECE/FAO 1992).

Divergent views exist regarding the nature and development scope of small-scale forests in Europe. The main contrast in thinking concerns the question of whether to interpret the concept small-scale forestry as a specific style of forest management characterised by non-financial considerations, or as a modified style of professional forest management adjusted to small forest size. According to the first interpretation, small-scale forestry systems are not only characterised by their limited size, but also by 'non-industrial ownership'. The latter refers to the fact that the motivation and objectives for the conservation and management of small-scale forests differ in many ways from the motivation and management objectives of commercial forest estates (Van der Ploeg and Wiersum 1996, Harrison *et al.* 2002). In small-scale forestry, non-financial motives such as conservation and amenity often predominate. Consequently, small forest owners have their own specific styles of forest management, relating more to their overall livelihood systems than to economic targets of specialised forest enterprises. Hence, sustainable management of small-scale forests should contribute to local quality of life in general, rather than only to socio-economic objectives such as employment and income generation.

Alternatively, it is often suggested that small-scale forest management is basically characterised by the size of forest operations and that this small size requires an adjustment of the professional forest management as applied in large forest estates. In this view, it is considered that in both small-scale and large-scale private forest management, financial motives are paramount, and these can best be assured through timber production. Due to the scaling-up effect, the efficient wood production in the multitude of small-scale forests could provide a considerable contribution to rural employment generation. This view is reflected in the Memorandum of Understanding of the recently initiated European Concerted Research Action on 'Economic integration of urban consumers' demands and rural forestry production' (COST Action E30 2001). This document states that in Europe, small forests provide a substantial share of the resources used for employing more than 6 M people in forestry and wood-processing industries. However, due to the relatively small size of the forests, the scattering of forest parcels as well as the low economic importance of forestry to the owners resulting in an 'amateuristic'

management style, the wood produced in these small forests is often unavailable for local wood processing industries. This underutilised wood resource could be exploited more for job and income creation in rural areas. Moreover, the forest resources could play an important role in the employment of people in local recreation and forest-based tourism activities. To achieve this objective, the sustainable management of these forests needs to be based on improving the financial outcomes of forest management by better linking forest production and services with consumer demands.

In order to understand better the nature and trends in small-scale forestry, an important question is how small private forest owners themselves perceive the role of their forest in the context of rural development. The aim of this paper is to document the opinions of small-scale forest owners in Europe on the role of their forests and to demonstrate how these opinions are related to ideas on rural development. The article focuses on the following questions:

- What are the characteristics of small-scale forest owners in Europe?
- What are the management objectives of small-scale forest owners?
- How do small-scale forest owners perceive the role of forests within rural development?

## **FORESTRY AND RURAL DEVELOPMENT: SOME CONCEPTUAL ISSUES**

To understand the significance of divergent views on the development scope of small-scale forestry it is increasingly acknowledged that forestry needs to be conceptualised not only as a sectoral activity, but also within the context of rural development (Glück and Weiss 1996, Elands and Wiersum 2001). This is demonstrated, for example, by the fact that at the initiation of this journal the role of small-scale forestry in rural development was rated highest of all possible topics to be covered (Harrison *et al.* 2002).

Traditionally, rural areas were predominantly associated with primary production processes. However, agriculture is no longer the obvious pillar of the countryside, and in many locations is of declining importance. Former farmers are migrating from some rural areas to towns and cities, while in other areas a gradual increase in secondary and tertiary sector activities is taking place. These transformations have modified and differentiated rural conditions. However, the impact on the European countryside has been quite variable. In some areas, the lure of city life including well-paid jobs in the industry or service sector has attracted an increasing number of young people which led to a decline in the economic vitality of the countryside. In other areas, urbanisation is encroaching upon the countryside and 'urbanites' are imposing their lifestyles and values upon rural communities. As a result of these dynamics having varying impacts in different rural areas, rural development is often contested. Consequently, the role of forestry development within rural areas is unequivocal (Hoggart *et al.* 1995, Marsden 1998, Elands *et al.* 2004a).

Conceptually, two contrasting opinions about the desired rural development strategies may be distinguished, namely rural modernisation and rural restructuring (Van der Ploeg *et al.* 2000). The strategy of rural modernisation aims at

strengthening traditional rural production processes and related industrial activities and rural services. It predominantly focuses on specialisation of primary production processes and better integration with commercial chains. The strategy of rural restructuring focuses on mutual benefits and synergies between primary production and other rural activities, and aims at increasing cohesion between them. Attention is also focused on improvement of local well-being and sense of place (Kusel 2001). Quality of life can be improved through development of new rural activities such as landscape and nature conservation and catering for leisure activities including recreation and tourism.

These changes in thinking about the content of rural development also affect ideas about the role of forestry in rural areas (Elands and Wiersum 2003, Elands *et al.* 2004a). In the past, forestry development was considered within the rural modernisation perspective, and attention was focused on the primary production function of forests as a means to contribute to rural livelihoods by providing products for home consumption (e.g. fuelwood), income and employment. At present, increased attention is given to the rural restructuring perspective, with attention focusing on the role of forests in maintaining and enhancing ecological and amenity services as a means of contributing towards environmentally-attractive living and leisure areas for the increasing number of people having an urban lifestyle (Elands and Wiersum 2001). These changes in the role of forests have important repercussions on ideas about the scope of small-scale private forestry (Schraml 2004, Wiersum *et al.* 2004). Within the rural modernisation perspective, small-scale forestry should contribute towards income and employment generation. This cannot be accomplished through wood production and related manufacturing activities alone, but also requires catering to the newly arising demands of tourists and recreationists. In contrast, within the rural restructuring perspective, small-scale forestry should not be conceived as a specialised activity, but as an integrated activity of multi-functional enterprises. Small-scale forestry should then be judged on its contribution to multi-functional enterprises and their impact on landscape and nature values and on shaping the local identity. These contrasting opinions are, of course, based on typical or ideal constructs, and in reality overlaps in opinions may exist.

## RESEARCH METHOD

Data presented in this paper were collected within the framework of the EC-funded *Multifunctional forestry as a means to rural development* (Multifor.RD) project. The principal research objective was to make a comparative European study about the nature and dynamics of landowner and public attitudes towards forests and forestry within the framework of rural development. In nine European countries – Austria (AU), Denmark (DK), France (FR), Germany (DE), Greece (GR), Hungary (HU), Ireland, (EI), the Netherlands (NL) and Spain (ES) – two case study areas were selected, a traditional forest area and an area undergoing afforestation. In Greece, where no substantial afforestation was occurring at that time, two traditional forest areas were selected (see Table 1).

**Table 1.** Case study areas characterised and classified according to Euro-zone, country and case study area <sup>a</sup>

Country	Case study area	Rural area type	Population density (persons per km <sup>2</sup> )	Land use		Built-up area (%)	Employment		
				Agriculture (%)	Forest area (%)		Primary (%)	Secondary (%)	Tertiary (%)
Atlantic zone									
Denmark	Haderslev	Urban character	117	86	6	5	4	24	72
	Hvorslev	Diversified	52	88	10	2	9	44	47
Ireland	Wicklow	Diversified	54	93	6	2	13	43	44
	Leitrim	Decline	31	77	6	4	21	36	40
Netherlands	Ede	Urban character	318	39	35	7	8	19	74
	Stadskanaal	Diversified	274	86	3	8	5	37	55
Central European zone									
Austria	Waldviertel	Decline	29	41	55	3	27	25	48
	Weinviertel	Growth	32	70	24	6	42	25	33
Germany	Staufen	Urban character	136	32	62	6	26	18	56
	Pfullendorf	Growth	116	57	31	9	50	20	30
Hungary	Szentgál	Decline	30	50	45	5	27	48	25
	Kerekegyháza	Diversified	75	71	15	11	10	40	50
Mediterranean zone									
Greece	Konitsa	Diversified	52	18	9	4	12	20	54
	Kolindros	Decline	42	45	44	3	50	16	29
Spain	Navès	Remote	2	16	82	0	54	18	27
	Torroella de Montgrè	Urban character	118	25	53	5	8	29	63

<sup>a</sup>Traditional forest areas are printed in normal font and afforestation areas in *italics*.

### **Comparative Survey in Eight Countries**

As part of the research, a comparative survey was carried out by means of a postal questionnaire amongst community inhabitants and landowners regarding their opinions on the local meaning of rural life and the present and potential role of forests and forestry in it. For landowners only, a separate set of questions was added to the questionnaire. The questionnaire was developed on the basis of a prior qualitative interview phase and was implemented in eight of the nine countries. In each case study area, a representative sample of community inhabitants and landowners was selected. The response rate varied between areas, but in general was about 50%, which is reasonably high for this type of cross-cultural research. The questionnaire was answered by 7044 respondents, consisting of 4638 non-land owning community inhabitants and 2406 landowners. Further details about the selected case study areas, overall research methodology and sampling methods for the quantitative survey are available in De Deugd and Elands (2001) and Elands and Wiersum (2003).

Earlier papers on this project have reported overall results as well as comparative results between community inhabitants and landowners (Wiersum and Elands 2002, Elands and Wiersum 2003, Elands 2004, Elands *et al.* 2004a, b). This current paper reports on the perspectives of small-forest owners on their management practices and their perspectives regarding the future role of forests in the context of rural development. The landowner respondents comprised farmers (N=938), farm-foresters owning both forest and farming land (N=1259), and foresters who own only forest lands (N=209). Small-scale foresters are defined as landowners owning forest smaller than 100 ha and not being full-time employed in their forest enterprise. Of the 1463 foresters and farm-foresters interviewed, less than 5% (N=62) did not fulfil these criteria. The following analysis is based on information of 1401 small-scale foresters, of which 1248 (89%) are farm-foresters and 153 (11%) foresters.

### **Data Handling and Analysis**

Data handling involved both weighting and grouping the data. Because the sample sizes differ substantially between areas (ranging from 17 to 199), data were weighted according to sample size when area differences were examined. Only findings significant at 1% level are presented. To account for possible differences between countries and types of areas in terms of rurality and forest history, four types of area are used in the analysis of the characteristics and opinions of small-forest owners: country, rural area typology, traditional versus aforestation and Euro-zones (see Table 1). The 'rural area typology' – derived from a cluster analysis on a list of socio-economic and land-use parameters, as reported by De Deugd and Elands (2001) – consists of: (i) rural areas with urban characteristics, (ii) rural areas with a diversified economy, (iii) growth areas dependent on agriculture, (iv) areas in decline dependent on agriculture, and (v) remote areas (Table 1). The remote area class includes only one case study area, whereas the diversified class includes five case study areas. The 'Euro-zone' refers to a geographical grouping of the countries into three European zones: Atlantic (DK, EI, NL), Central European (AU, DE, HU) and Mediterranean (ES, GR).

Apart from cross-tabulations, several multivariate techniques have been used. Factor analysis (varimax rotation) permitted the reduction of a large number of

interrelated variables to a smaller number of latent dimensions of factors; this was applied to determine the underlying dimensions of the forest management objectives. Stepwise cluster analysis has been used to group the forest owners on the basis of the found factor forest management scores. First, a hierarchical cluster analysis, based on the dendrogram and the agglomeration schedule, was applied to determine the appropriate number of clusters as well as to detect and remove outliers. Ward's method was adopted to keep the clusters not too different in size. Second, on the basis of the outcome of the hierarchical cluster analysis, a K-means cluster analysis was performed. The same procedure has been carried out for future development options for localities.

### **Representativeness of the Data**

The data presented in this paper cannot be considered as representing the average situation of small-scale forest ownership in Europe. For example, the survey did not include northern Scandinavian countries where private forest ownership is considerably greater than in the rest of Europe. Moreover, the selection of research areas was based on the strategy to cover a wide variation of rural and forestry conditions in Europe rather than country-wise representative areas. Nevertheless, the results from a large variety of case studies throughout Europe reveal a number of trends in small-scale forest ownership as well as emerging issues about its future scope, and provide valuable insights on the contribution of forests to rural development.

In other papers, the authors have reported extensively on different perceptions and ideas with respect to the role of forestry in rural development between cases, countries and rural area types (e.g. see Wiersum and Elands 2002, Elands and Wiersum 2003, Elands *et al.* 2004a, b). The statistically significant differences in the perspectives of respondents between countries were often stronger than between the rural area types, while differences between countries were in several cases as strong as differences between case study areas. This finding indicates that, in addition to the quality of rural conditions, historical differences between European countries in institutional frameworks for both forestry and other land uses still have a major bearing on thinking about forestry conditions and trends. This paper focuses mainly on the differences between countries grouped in Euro-zones.

## **CHARACTERISTICS OF SMALL-SCALE FOREST OWNERS ACROSS EUROPE**

Small-forest owners can be characterised according to size of the forest holdings and the role forests play in their livelihoods. Survey results clearly illustrate that private forest ownership in Europe mainly concerns small forest plots. The median size of the forest holdings was 3.0 ha, varying from 1.3 ha in Greece to 4.5 ha in Spain. About 65% of the foresters interviewed own less than 5 ha, 28% between 5 and 20 ha, 5% between 20 and 50 ha, and only 2% owns between 50 and 100 ha of forest. No significant differences were observed in size of the forest plots between farm-foresters and exclusively forest owners.

The role of forests in the livelihoods of forest owners was characterised by two criteria, namely the employment status of the forest owners, and the location of the

forest in relation to the housing location of the owner. These criteria were selected because they indicate how the forests relate to the daily lives of owners. Four types of employment status were distinguished (based on Praestholm 2002):

- Retired forest owners: 27% of all owners;
- Hobby forest owners: 35% of all owners did not define themselves as a professional (farm) forester;
- Part-time forest owners: 7% of all landowners are employed as (farm) forester, but reported off-farm (mainly forestry) duties as well; and
- Full-time farm-forest owners: 31% of respondents were engaged full-time in a combination of agriculture and forestry.

Thus, only 38% of respondents are fully or part-time engaged in land-use activities, while 62% can be classified as hobby or retired forest owners. The majority of the forest owners interviewed combine farming and forestry (89%). Exclusive forest owners may be engaged in non-forestry activities (4%). Most of the small-scale forest owners without any farming activities are either hobby owners or retired owners. No statistically significant relationship between employment status and forest size was detected.

Only 9% of forest owners do not live in the same locality as the forest property, comprising 16% of the foresters and 8% of the farm-foresters. Full-time farm-forest owners and part-time forest owners live mostly in the locality, with on average only 2% living outside. In contrast, 15% and 11% of the retired and the hobby foresters respectively live outside the locality. This reflects how forest owners may hold on to their forest, even in cases where they have moved away from the area where the forests are located. Absentee owners own twice as much forest land (13.3 ha on average) as attendant owners (6.7ha).

Both employment status and location of the forest are related to the way in which the forest owners obtained their forest. Most forests were obtained by inheritance (41%), followed by purchase (28%) and self-planting (24%). Of the full-time farm-forest owners and part-time owners, 39% purchased all or parts of their forest land, compared to only 22% of non-economically dependent owners (retired/hobby). Forest owners who inherited their property are less common amongst part-time owners than amongst the other employment categories (27% vs. 43%); the part-time owners obtained their forest relatively more frequently through planting (32% vs. 23%). Except for the purchase of forests – more frequent for farm-foresters (30%) than exclusive forest owners (13%) – there was little differences between these two groups. Absentee landowners often obtained forest through inheritance (58% compared to 39% amongst local owners).

### **Differences between Areas**

Important variations were observed between areas and countries in respect to the status of small-scale forest ownership. Moreover, ‘area dependent variables’ explain more variation within small-scale forestry conditions than personal variables. As illustrated in Table 2, notably in Greece but also in Hungary and the Netherlands, there are a relatively large number of exclusive foresters. In Spain and Hungary the size of the forest plots is relatively large, while in Greece and the Netherlands it is relatively small. Regarding employment status, in Hungary and Spain there are



relatively many retired owners, in Hungary and the Netherlands relatively many hobby owners, and in Denmark and Ireland relatively many part-time (as well as full-time) farm-forest owners. Absentee ownership is relatively high in the Netherlands and Spain. In Ireland and the Netherlands, a relatively high proportion of forest was obtained through planting, while inheritance played a relatively greater role in Austria, Germany and Spain.

**Table 2.** Comparative characteristics of small-scale forest ownership throughout Europe<sup>a</sup>

Ownership characteristic	Mean	Atlantic			Central European			Mediterranean	
		DK	EI	NL	AU	DE	HU	GR	ES
Type of landowner (%)									
Foresters	11	7	4	20	10	7	17	24	5
Farm-foresters	89	93	96	80	90	93	83	76	95
Median size (ha)	3.0	3.0	2.2	1.5	3.0	2.0	4.0	1.3	4.5
Employment status (%)									
Retired	27	19	8	31	35	15	37	28	46
Hobby	35	23	20	56	29	39	54	33	26
Part-time	7	17	33	3	2	9	1	0	3
Full-time	31	41	39	0	34	37	8	39	0
Absentee ownership (%)	9	0	0	17	8	0	9	3	41
Obtainment forest (%)									
Planted	24	27	74	51	14	23	24	13	6
Purchased	28	62	5	30	15	16	7	35	36
Inherited	41	13	25	21	71	67	25	50	62

<sup>a</sup> From cross tabulations, Cramer's V ( $P < 0.01$ ) is found as: type of landowner 0.22, employment status 0.31, absentee ownership 0.43, planted 0.43, purchased 0.44 and inherited 0.48. The ANOVA  $\eta^2$  statistic ( $P < 0.01$ ) for median forest size is 0.11.

Although these differences partly reflect the specific country and case-area conditions, some trends in small-scale forest ownership under different types of rural conditions are apparent. In remote rural areas, forest plots are relatively large, often owned by retired people and absentee owners, and have often been inherited. Although the study did not directly assess the reasons for such a situation, the data suggest that in these remote areas, even after people have migrated to other areas, forests tend to have a low economic value and stay in the family due to a lack of market for forest lands. Conversely, in rural areas with urban characteristics as well as diversified rural areas many forests are no longer owned by traditional rural dwellers, but by hobby-owners who may create small private forest resorts by planting abandoned agricultural land. In growth areas dependent on agriculture, forest are often still owned by part-time or full-time employed people, who may have obtained forests through planting or purchase.

## SMALL-SCALE FOREST MANAGEMENT

Further information on the aims for maintaining small private forests can be ascertained from the stated objectives of forest owners, as well as the manner in which management is organised.

### Management Objectives

Forest owners were asked to indicate the level of importance they attribute to nine distinct management objectives, relating to the functions that are usually identified in forest policies. As indicated in Table 3, many forest owners do not consider financial objectives (i.e. income from both timber and non-timber goods and services) as being of high importance. Objectives related to the environment and landscape (protection of air, water and soil, biodiversity, and landscape scenery) are rated much higher. These findings are in agreement with the earlier findings regarding the non-economic dependency of small forest owners on their forests (Van der Ploeg and Wiersum 1996). In general, with increasing forest size the importance attributed to both wood and non-wood objectives increases, except in respect to the landscape objective. This correlation between forest size and importance attributed towards management objectives is most notable for timber production.

**Table 3.** Management objectives (1 = no importance/non existent, 2 = some importance, 3 = high importance)

Management objective	Mean value
Natural resources protection (air, water, soil)	2.4
Enhancing landscape scenery	2.3
Contribution towards biodiversity (plants and animals)	2.2
To develop an asset for the next generation	2.1
Catering a nice place for recreation	2.0
Supply of timber for my own use / use of my organisation	1.9
Income generation from wood production	1.6
Good possibilities for my own hunting	1.4
Income from non-timber goods and services (mushrooms, game, tourist activities, renting out hunting rights)	1.2

Factor analysis identified three distinct functional management categories: nature and landscape, economy, and personal use (Table 4). Based on the factor scores, the forest owners have been grouped, by means of a combined hierarchical and K-means cluster analysis, into one of the following forest management orientations:

- *indifferent* (37%): having a low level of motivation concerning all the defined forest functions;
- *environmentalist* (30%): place priority upon nature and landscape;
- *multifunctional* (17%): attach equal priority to economy and nature and landscape; and
- *self-interested* (16%): use the forest mostly for providing products for their own use.

**Table 4.** Functional management categories

Nature and landscape	Economy	Personal use
Enhance landscape scenery	Income from wood	Use for personal
Contribute towards bio-diversity	production	hunting
Protect natural resources	Income from non-timber	Supply of timber for
Create nice places for recreation	products and services	own use
	Supply of timber for own use	

Explained variance factor analysis (varimax rotation): 63%. Cronbach's alpha: 0.74 (nature and landscape), 0.54 (economy), and 0.25 (personal use).

These results reveal that, at the European level, the highest proportion of forest owners are indifferent as regards the functioning of their forests. This orientation scored highest for all types of forest owners except the hobby owners; notably, 44% of the retired forest owners belong to this category. The hobby owners are most often environmentally oriented (36%). Amongst retired and hobby owners the proportion of multifunctional oriented foresters (16% and 18%) is larger than self-interested foresters (12%), but for part-time and full-time owners the opposite is the case (13-18% multifunctional orientation versus 21-25% self-interest orientation). Owners of forest plots smaller than 5 ha are predominantly indifferent to their forests (44%) or environmentally oriented (31%), while owners of forests larger than 50 ha are mostly oriented on multi-functionality (36%) or self-interest (29%).

### Organisation of Management

In addition to management objectives, the management status of small-scale forests can be evaluated on the basis of whether the owner manages the forest personally or employs a professional forest manager, and whether he or she is a member of a professional forestry organisation.

About 82% of respondents managed the forests themselves, alone or with the help of family members. The others hire either a company or consultant, or use hired staff. The management approach of exclusive forest owners is different from that of farm-foresters, with less involvement of family (39% versus 56%) and more involvement of a company or consultant (16% versus 8%). Regarding employment status, most full-time foresters (92%) and retired foresters (75%) managed their forest themselves. Notably, small forest plots, but also large forest plots, are relatively often self-managed, while in-between sized plots are relatively more often externally managed.

Even though many forest owners manage the forests themselves, only 33% are members of a forestry organisation, a relatively low level compared to the 56% of farm-foresters who are member of a farming organisation. Membership of forestry organisation is strongly related to the employment status: both retired and full-time forest owners are much more often a member than hobby and part-time owners.

### Differences in Objectives and Management Organisation between Areas

Important differences in the objectives for forest management are found both between countries and between rural area types. For instance, the respondents in

Greece and Denmark (with mean values of 2.2 and 2.0 respectively, on a scale from 1 = strongly agree to 5 = strongly disagree for this management objective) placed a comparatively high importance on commercial wood production, while respondents in Austria (2.5), Greece (2.4) and Germany (2.2) placed a comparatively high importance on wood production for own use. Relatively low importance was placed on wood production for sale and self-use in the Netherlands (2.0 and 1.4) and Denmark (1.4 and 1.5). Hunting was comparatively highly rated in Greece (1.8) and Denmark (1.8), while recreation was relatively highly rated in Greece (2.7). Also the type of rural area influenced the value placed on various objectives. This is most clearly the case for the supply of timber for own use, which scored much more highly both in growth areas and decline areas dependent upon agriculture, and lowest in remote areas.

In respect to the three functional management categories in all countries, the group of objectives related to nature and landscape scored the highest. In Denmark, Hungary, the Netherlands and Spain, personal use objectives were accorded higher importance than economic objectives, while in Austria, Germany, Greece and Ireland the economic objectives scored higher than the personal use objectives. The importance of the three functional management categories also varied between rural areas types. Nature and landscape objectives scored highest in all areas. Even where supply for timber for own use was relatively important in the growth and decline areas dependent on agriculture, the economic objectives were still ranked more highly than the personal use objectives. Conversely, the personal use objectives scored highest in the urbanised, diversified and remote areas.

Differences were found in respect to the forest management orientations between countries (Table 5). In Greece, only a small percentage of indifferent forest owners was detected, while in Germany, Hungary and Ireland this category of forest owners was well represented. The self-interested category was not present in Germany, and was under-represented in Ireland and Austria, but was prevalent in Spain and Denmark. The environmentalist category was most prevalent in the Netherlands and least in Denmark. The multifunctional category was almost absent in Denmark and the Netherlands, but common in Ireland and Greece.

**Table 5.** Comparative forest management orientations (% of respondents)

Forest management orientation	Mean	Atlantic			Central European			Mediterranean	
		DK	EI	NL	AU	DE	HU	GR	ES
Indifferent	37	38	46	35	28	47	44	11	28
Environmentalist	30	18	21	50	45	41	27	39	23
Multifunctional	17	3	30	7	24	12	20	33	13
Self-interest	16	41	3	8	3	0	9	17	36

Cramer's V = 0.30 (P < 0.01).

Differences in the importance of the various forest management orientations were also found between different types of rural areas. In the urbanised areas, the environmentalists (37% of respondents) and indifferent orientations (37%) were most common. These orientations were also prevalent in the diversified areas and growth areas dependent on agriculture, where the proportion of adherents to the

indifferent orientation (43% and 50% respectively) was even higher than that for environmentalist orientation (31% and 36% respectively). In decline areas dependent on agriculture, the multifunctional orientation (33%) and the environmentalist orientation (32%) were found to be most prevalent, and in remote areas the self-interest orientation dominated (50%).

## RURAL AREA FUTURE PERSPECTIVES

Rural development can be perceived as referring to possible futures for rural areas. To gain insight into the perspectives in respect to rural development, forest owners were asked what kind of future they would prefer for their locality by choosing a maximum of three out of 11 alternatives.

### Preferred Futures

The three most preferred future options are an increase in employment opportunities (stated by 45% of respondents), organic farming (41%) and intensive factory farming (30%), although opinions on the latter two options were rather conflicting. Other future options that were mentioned by about one quarter of all forest owners include an increase in the number of visiting tourists, industrial activities, availability of services, scenic beauty of landscape and strength of social bonds or friendship. An increase in the area of forests was nominated by only 23% of the forest owners. The two least preferred future alternatives are an increase in the amount of nature and wildlife areas and an increase in built-up areas.

A more focused assessment of the preferred future development of the locality was made on the basis of a stepwise hierarchical and K-means cluster analysis on all survey responses (N=7402). Six categories of preferred future developments were identified. In Table 6, these categories are presented as well as the distribution amongst small-scale forest owners. Two of these categories (agribusiness and secondary sector development) can be classified as the traditional approach of agricultural modernisation, and three (tourism, and ecological and organic economy development) correspond more closely to the more recent concept of rural restructuring (Wiersum *et al.* 2004). The sixth category of development of traditional values is not directly related to these two development approaches. Overall, more forest owners are in favour of a restructuring perspective than of a modernisation perspective. An increase in forest cover is primarily associated with rural restructuring (environmental and ecological development) rather than with agricultural modernisation (business development).

The preferred future for the locality differed little between foresters and farm-foresters, or with the size of the forest property. However, the employment status of forest owners can explain some differences (Table 7). Full-time farm-forest owners tend to favour agricultural modernisation, whereas the other owner types tend to favour rural restructuring. Forest owners living outside the locality are much more in favour of rural restructuring (64%) than of agricultural modernisation (28%); notably they place much higher priority on ecological development (32%) than local forest owners (16%).

**Table 6.** Future developments as preferred by small-scale forest owners

Basic development approach	Preferred future development
Agricultural modernisation	<p><i>Agri-business development</i> (22%): these foresters strive predominantly for a future with more intensive factory farming and employment opportunities</p> <p><i>Secondary sector economy development</i> (19%): this group of forest owners prefers an increase in industrial activities, employment opportunities and availability of services</p>
Rural restructuring	<p><i>Tourism development</i> (20%): an increase in the number of visiting tourists is the main future perspective of respondents belonging to this category</p> <p><i>Ecological development</i> (17%): in this future perspective organic farming, nature and wildlife, landscape scenery, and to a smaller extent, forests are dominating</p> <p><i>Organic-economy development</i> (12%): this group of forest owners chooses exclusively organic farming in combination with employment opportunities as being most important in the future</p>
Traditional values	<p><i>Development of traditional values</i> (10%): these forest owners emphasise rural services and friendship between neighbours as well as strength of bond as the most desired future</p>

**Table 7.** Preferred future per forest owner activity level (% of respondents)

Preferred future	Forest owner activity level			
	Retired	Hobby	Part-time	Full-time
Agricultural modernisation	39	35	33	51
Agro-business	22	17	11	31
Secondary sector economy	17	18	22	20
Rural restructuring	50	56	55	40
Tourism	16	24	22	18
Ecology	22	19	17	10
Organic-economy	12	13	16	12
Traditional values	11	9	12	9

Cramer's  $V = 0.11$  ( $P < 0.01$ ).

### Differences in Preferred Futures between Areas

Statistically significant differences in the rural futures as preferred by small forest owners were found to exist between countries (Table 8). The most striking contrast in opinions are between forest owners in Denmark and Greece, who relatively often prefer agricultural modernisation, and forest owners in Ireland who mostly desire rural restructuring. Although the forest owners in Denmark and Greece agree in preferring agricultural modernisation, they differ in respect to what type of modernisation they would like to take place. Danish respondents were especially

interested in the development of the secondary sector economy and had a low regard for tourism development, while in Greece respondents were relatively highly interested in agro-business and tourism development but little interested in ecological development.

**Table 8.** Comparative preferred futures throughout Europe (% of respondents)

Preferred future	Mean	Atlantic			Central European			Mediterranean	
		DK	EI	NL	AU	DE	HU	GR	ES
Agricultural modernisation	41	52	6	34	39	39	40	49	35
Agro-business	22	18	0	21	19	17	24	33	28
Secondary sector economy	19	34	6	13	20	22	16	16	7
Rural restructuring	49	32	82	60	55	53	45	49	59
Tourism	20	12	39	8	15	27	24	35	22
Ecology	17	14	28	43	19	17	12	7	28
Organic-economy	12	6	15	9	21	9	9	7	9
Traditional values	10	16	12	6	6	8	15	2	7

Cramer's V = 0.30 (P < 0.01).

Differences in preferred futures were found between different rural area types, although the statistical relations were less strong than at country level. In almost all rural area types, the restructuring perspective (supported by 55-59% of respondents) dominated over the modernisation perspective (33-37%). Only in agricultural growth areas did the agricultural modernisation perspective dominate (52%) over the rural restructuring perspective (37%). When the most preferred future options are examined in more detail, it appears that forest owners in the remote area (all farm-foresters) mostly would like to have more agribusiness activities, and forest owners in agricultural growth areas would mostly prefer secondary sector development. In rural areas with urban characteristics, ecological development is preferred, while in the diversified, declining and remote areas, tourism development is most highly appreciated. Ecological development scores lowest in agricultural areas. Maintenance of traditional rural values scores low in both the urbanised and remote area. One could interpret this as indicating that in urbanised areas people are no longer aware of traditional values, and that in remote areas people feel that traditional values are blocking development.

## EMERGING TYPES OF SMALL-SCALE FORESTRY

On the basis of the above information, tentatively four categories of small-scale private forest owners can be distinguished:

- About two-fifths (38%) are hobby and part-time employed local owners who endorse rural restructuring, especially in regard to development of tourism and organic farming. This group includes both owners who are economically dependent on their forests and owners who are not.
- About one third (32%) consist of fully employed local owners who are economically dependent on their forests. They prefer a future with rural

modernisation and have often a focus on agro-business development, but their management is predominantly multifunction oriented.

- Less than a quarter (22%) are retired local owners who are not dependent on their forests and who often (in about 50% of the cases) have an indifferent management attitude. Rural modernisation is as important as rural restructuring for this group.
- About one in ten (8%) are absentee forest owners, who are not economically dependent on their forests and who have mostly an environmental or indifferent management attitude. Two-thirds of this group prefer a rural restructuring and one third a rural modernisation.

These categories are not discrete, implying there is considerable heterogeneity within each group in respect to ownership characteristics, management objectives and preferred futures. Consequently, the categories should be considered as indicative of general trends in small-scale forestry rather than as representing exclusive groups. It is noteworthy that about 30% of the forest owners have an indifferent attitude to their forests. This group includes many absentee owners and retired local owners, who own only forest lands but who are not economically dependent on these forests. Almost 40% of the forest owners are only modestly interested in forest management; often they have a strongly environmental management orientation. This group includes many hobby owners and part-time employed people. Only one-third of the private forest owners are still economically dependent on their forests, and these have predominantly a multifunctional management orientation.<sup>1</sup>

## CONCLUSION

The results of the study clearly indicate important variations in the nature of the ownership and management of small-scale forests across Europe. The differences indicate that important changes in small-forest ownership are taking place. Traditionally, within Europe, many small-scale forest owners were economically dependent on their forests, either for home or commercial use, but this situation is changing. In the survey, only one third of forest owners with less than 100 ha were found to be still economically dependent on their forests; they have a predominantly multifunctional management orientation. The size of their forests is mostly larger than the average size of small-scale forests. These rural-based forest owners are employed in primary production processes and consider agricultural modernisation as a major development challenge. Forest can contribute towards such developments by providing options to produce forest products as well as amenity functions for tourism development.

About two-third of all small-scale forest owners in the survey are not economically dependent on their forests. They are mainly rural-based people who

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<sup>1</sup> In a recent study in Denmark a differentiation between classic forest owners (52%), hobby owners (30%) and indifferent owners (18%) was found (Boon *et al.*, 2004). Although these categories were defined according to a different data set than in the study reported here, the overall trends are obviously similar.



are either retired or part-time employed, or people who keep their forests as a hobby. An important factor contributing to the predominance of this group of small-scale forest owners seems to be that in contrast to farm lands, forest lands are more often kept in the family after they have lost their traditional productive role within local farming systems. Due to intergenerational transfer to various children, it is likely that this trend results in progressively smaller forest holdings. These new types of small-scale forest owners have predominantly a self-interested or environmental management orientation. In addition, the new group of non-economic oriented small-scale forest owners include absentee owners, who have mainly an environmental or indifferent management orientation. In the survey, this group was still relatively small, but due to migration of rural people to urban areas their number is likely to increase in the future. Similar changes in forest ownership conditions have also been reported in some recent studies in Austria (Kvarda 2004), Denmark (Boon *et al.* 2004), Germany (Ziegenspeck *et al.* 2004) and the Netherlands (Wiersum and Van Laar 1999).

The gradual changes in socio-economic characteristics and lifestyles as well as forest size and management objectives of small-scale forest owners differ in their impact between regions (cf. Karppinen 1997). Due to historic and cultural traditions between European countries, important differences exist in the organisation of private forest owners. Consequently, the trends sketched have a variable impact in different countries. A second major variable influencing the trends in small-scale forest ownership and management orientation are differences in the overall rural development situation. However, in this study, country differences were found to be statistically more often related to the management characteristics than differences in the rural area typology; this seems to indicate that rural differences are subordinate to country differences.

In view of the changes in lifestyles of forest owners and rural conditions, the trend towards retired or hobby forest owner as well as 'absentee' forest ownership is likely to become even more prominent in the future. Consequently, the traditional association of small-scale forestry and farming will become less, while the interest of small-scale forest owners in the production function (for either commercial purposes or home consumption) will further decrease. Rather, small-scale forest owners will increasingly maintain their forests as an amenity asset within a non-rural livelihood. In the literature such small-scale forest owners have been characterised as non-industrial private forest owners. However, this term describes only that they are not interested in commercial timber production, but does not clarify the alternative management orientation to which they adhere. Rather than characterising small-forest owners by either size or non-industrial nature, it seems much more relevant to develop a classification system which reflects the various types of management orientations in relation to employment status. The survey results reveal that most of these 'non-industrial' forest owners are either indifferent to management objectives or focus on the environmental functions of forests. This attitude is also reflected in their opinion about preferred rural futures; they predominantly favour rural restructuring rather than agricultural modernisation.

Policies to stimulate forestry development should be diversified so as to optimally reflect the management orientations of different categories of small-scale forest owners. For the traditional category of rural-based small-scale forest owners, the development actions as considered by the COST Action E30 are eminently suited.

However, other policy options and instruments need to be considered to stimulate development activities for the new categories of small-scale forest owners who are not economically dependent on their forests. In case of rural-based small-scale forest owners with a self-interested or environmental management orientation, it would be worthwhile to develop new types of forestry extension approaches that are related to the specific ownership conditions and management orientations of this group. Further, in view of the predominantly indifferent attitude of 'absentee' small-scale forest owners it might be useful to consider whether area-focused development efforts aimed at stimulating group processes might not be more efficient than individually-focused extension programmes.

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